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ABSTRACT

During the last few years, there has been a general emphasis in higher education on quality issues and the use of outcomes measures to assess institutional effectiveness. The quality emphasis in education suggests that previously defined performance standards are met through a review of outcomes assessment. This emphasis on outcomes measures represents a positive shift for community college occupational and technical programs, since, to a large extent, it is easier for occupational education to demonstrate effectiveness and accountability. An American College Testing survey of 675 colleges in 1990 found that the two most important measures of institutional effectiveness were employers' satisfaction with graduates and the percentage of students who received jobs. With respect to evaluating specific programs, performance standards should be based on identifiable and verified competencies which are determined in advance and explicitly stated. Four major steps for designing and implementing a performance standards system include defining student learning expectations in conjunction with customers, reviewing existing state or licensing agency standards, developing or revising curricula to address the expected outcomes, and measuring outcomes with the goal of improving both the standards and curriculum. Finally, to maintain relevancy, standards must be constantly renewed to adjust to changes in the workplace and assessment methodologies of standards should be reviewed. (KP)

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the private sector seems to concentrate less on the definition of quality and more on the process and the incremental achievement of quality activities with the idea that by striving for quality, the definition losses importance in the quest.

The quality emphasis in education suggests that performance standards are met through a review of outcomes assessment. New definitions of quality focus on student outcomes, and in occupational education, students' abilities to effectively perform on the job. Yet, establishing outcomes assessment measures or performance standards can be costly. Tests or assessment instruments need to be developed and administered. Curriculum needs to be defined in a competency mode. Curriculum needs to be reevaluated and revised consistently. Much more information on employer needs will need to be gathered, especially in a customer focus environment. Achieving quality requires more than just the allocation of additional financial resources. Quality movements typically require a whole new mindset--an entirely new way of doing business and an emphasis on educational outcomes rather than resources. In addition, quality should not be confused with establishing minimum performance standards.

Goodwin (1989) suggested that there were five best predictors of occupational program quality. Intensity of instruction, defined as "the extent to which faculty have the opportunity for in-depth, concentrated, and sustained instruction" was the most important predictor (p. 28). Programs that included a substantial portion of applied learning were valued highly by both students and employers. High quality programs are those that exhibit significant linkages with the private sector. Programs that were aggressive in their placement activities, especially by faculty, were considered high in quality. And finally, programs that provided accurate and honest public information were rated higher.

Institutional Assessment and Student Outcomes

The focus of institutional assessment has recently shifted from process oriented evaluation to outcome measures. Spurred by regional accrediting agencies, government and other funding bodies, and the public, institutional assessment has become more comprehensive and systematic. This shift is a positive direction for community college occupational and technical programs. To a large extent, it is easier for occupational education to demonstrate effectiveness and accountability. An American College Testing study on student outcomes surveyed 675 colleges (Cowart, 1990). The most important measurement of institutional effectiveness was employers' satisfaction with graduates. This measure was rated important or very important by 96% of the colleges responding to the survey. The second most favored measure of assessing academic progress was the percentage of students who received jobs, used by 70% of the colleges. Broad based outcome techniques have already been developed to assess the success of occupational training. As an example, the Washington State community and technical college system employees a state-wide computer match follow-up procedure on vocational students in conjunction with the state's Employment Security Department. Information is gathered on program leavers and completers to determine employment status, placement in jobs or industries related to training, annual wages, full-or part-time employment, job titles, and continuing education status.

STUDENT OUTCOMES AND PERFORMANCE STANDARDS: ISSUES AND CHALLENGES FOR COMMUNITY AND TECHNICAL COLLEGES

Walter H. Nolte, Ph.D.

Introduction

Throughout the last decade, student outcomes assessment, the accountability movement, and institutional effectiveness have been predominant trends in higher education. Competency based education linked to identifiable performance standards has also been an important trend in postsecondary vocational/technical education. Competency based instruction has been spurred by the Federal Vocational Act (Perkins II) and as a result of private sector concerns and demands for a trained and flexible workforce. Technology, the global economy, international competition, and the aging workforce are only a few of the factors changing the nature of work and training and education. The decline in the numbers of 18-24 year old entry level workers is having a profound effect on American business and industry. Businesses are beginning to hire employees whom they would not have considered five years ago (Owens & Linder, 1989). Significant numbers of workers are entering the workforce with less than adequate training (Nolte, 1991). The effect of these changes has resulted in national, state, and local movements embracing competency based education linked to performance standards that are verified by outcome assessment measures. Concern over the quality of education has also resulted because of scarce resources. This concern will increase as the nature of work continues to change, especially if the apparent mismatch between education and the workplace widens.

Quality and customer service issues, like the Total Quality Management (TQM) movement are also in the forefront of new business techniques. These initiatives have and will continue to effect workplace education and training. This manuscript will provide an overview of the quality initiative and institutional and outcomes assessment, differentiate between outcomes assessment and traditional program evaluation, highlight the need for performance standards in the context of vocational education, and suggest some basic criteria for the development of performance standards.

Quality

There is a new perspective or paradigm in the working world. "In the business sector, quality has replaced price and style as the chosen weapon in the market-share battle, in both America and foreign markets (Seymour, 1991, p. 1)." Defining quality in education, however, is problematic. What is the definition of quality? Who determines what quality is? How will an institution or program know if it has achieved quality? What action can be taken to improve quality? Can quality be improved by initiating curriculum revision, especially in general education, or by establishing stringent admission standards, or by improving buildings or equipment? Is quality a value added issue? If so, how does this relate to performance standards? The TQM movement in

In a League for Innovation monograph, Seybert (1990) provided a guide for assessing the effectiveness of career preparation programs. The guide suggested data sources for a series of outcome oriented questions. Are college programs achieving educational outcomes as verified by competency testing, transfer rates, results of licensing and certifying exams, completion rates, or other competency based measures? Are students fulfilling their educational goals as verified by employment, wages, and transfer rates? Are employers' needs met as verified by surveys of employers? Are programs contributing to the economic health of the community, as demonstrated by the number of employers attracted to a community or economic impact studies?

At the institutional level, measures of effectiveness can be multiple. Many schools gather information and analyze course and program completion rates, student grade point averages, degrees awarded by programs, and other follow-up data to determine critical success factors. Information provided by state or regional data sources should be examined and analyzed in the development of a performance standard system. Enrollment and demographic data, transfer information, program evaluation and accreditation reports, entry/exit tests, regional accreditation reports, student evaluations of courses and instructors, and licensure and certification results are all common measures of effectiveness. Except for licensure tests results, most of these do not directly address performance standards.

Program Evaluation

Traditional evaluation of occupational program effectiveness often deals with input-output models. Inputs--funding, staff, buildings, and equipment--are analyzed based on the organizational structure, curriculum, and method of instruction and compared to output as measured by student learning, value added to the student and the economic resources of the community, and advisory committee and employer satisfaction. Increases in earning power, achievement, or pass rates on standardized exams are compiled and integrated with information on enrollment trends, cost per student, student/faculty ratios, or total cost of a program. Evaluations may include both quantitative and qualitative approaches. Interviews with students, faculty, and employers, class or lab observations, logs or diaries are all qualitative approaches. These evaluations may address the need to assess student learning and outcomes, but may not address how students are doing in relation to an approved standard or accountability measure. They are often an evaluation of the instructional process, not student performance. They often address the appropriateness of a program or discrepancies between program goals and outcomes or if a program produces a trained employee in a more effective or efficient manner. As indicated above, the institutional effectiveness movement has shifted from a process oriented evaluation to an outcomes orientation, focusing on results, accomplishments, and skills. Outcomes assessment requires planning--a need to set direction and purpose and establish the expected performance standards. Review of performance standards and analysis of the outcomes should focus on improving institutional effectiveness and curriculum adaptation.

According to Peter Ewell (1983) program review and evaluation is a systematic, regular, and comprehensive process that involves making a judgment on student outcomes. Ewell argued that program review should focus on educational outcomes rather than more traditional evaluation

techniques that deal with inputs, resources, and efficiency. This move to outcomes and accountability is the result of a significant number of new postsecondary institutions and a rising number of students from all ages and background attending college during the last thirty years. Ewell asked, "What has the program produced" (1983, p. 4). He describes the program review process as similar to the production cycle. An unfinished product is educated, becomes a finished product with value added. The notion of outcomes assessment is to measure the value-added product. In recent years, this measurement technique has been compared to criteria based performance standards that relates to common industry standards on employee skills and abilities. The concept is akin to the private sector ideas of total quality control. Ewell suggested a variety of achievement indicators. These range from program completion rates, job market needs, or incomes of program completers or graduates. Program review concentrates on student questions. Do students know more when they have finished a program? Can they do anything better? What do students feel about their educational experience? This is an outcomes approach, however, it is an approach that does not relate outcomes to performance in the workplace. Ewell was quick to point out that program evaluation is judgmental, a human process trying to find "...the elusive dimension of quality (p. 11)." In another work, Ewell suggested that, "Even the most reliable quantitative data measurement of outcomes is at best only an indicator of the underlying attribute to be assessed (Ewell, 1983a, p.2)."

Performance Standards

The movement to establish educational performance standards for occupational programs is designed to assure that what is being taught is what is needed in the workplace. Is a broad or narrow curriculum needed--a practical hands on program that very early provides real life experiences or a theoretical or abstract based program with little practical training? Similar to defining quality, however, clarifying performance standards is also problematic. Hoachlander (1991) defined performance standards as

> the level of performance considered acceptable for (1) advancing to the next level of education or training, (2) successfully entering a job related to training, (3) continuing to a course or program, or (4) establishing acceptable program or institutional performance-e.g., correctly completing an overhaul of front disc brakes within 90 minutes, 75 percent of students mastering correct brake overhaul within one semester of instruction, 70 percent of students choosing to enter an automotive program completing the program, 70 percent of students opting for vocational education completing a sequence of vocational and academic courses (p. 1).

Hoachlander suggested that standards can be defined for students, courses, programs, institutions, districts, regions, or states and can be established to measure performance at a single point or over time. Standards should be clearly defined, easy and inexpensive to measure, consistent, and quantifiable, according to Hoachlander. In addition, the number of measures must be manageable and administered on a consistent and regular timetable to provide credibility.

There are several difficulties with establishing effective performance standards. Defining performance standards for the soft or adaptive skills is also difficult. For example, how are changes in student attitudes and values measured? The question of institutional autonomy or local conditions is complex when dealing with performance standards for a specific occupation or trade. Faculty also have issues and concerns with performance standards. They raise the academic freedom question, the measurement of soft skills, the amount of work necessary to develop performance standards, or they question will it really matter--is it only a fad? Are performance standards really an oblique method of faculty evaluation? Faculty and other college personnel may fear that programs will be unable to graduate enough students to meet performance standards.

There are also problems with nationally normed objective assessment instruments. Many measure only recall and recognition skills, not higher level cognitive skills (analysis or synthesis). Also, testing can drive instruction--will performance standards drive instruction, excluding other forms of learning? Who evaluates the quality of the assessment instrument? Are performance standards based on the entire occupational responsibility, or the ones existing at the time the standard was written? Is there a model curriculum associated with the standard? Does the curriculum leave room for local variability? Does the standard leave room for local variability?

There are four major steps for designing and implementing a performance standards system: 1) define student learning expectations in conjunction with customers, 2) review existing standards such as state approved measures or standards provided by licensing or certification agencies or associations, 3) develop or revise curriculum to address the expected outcomes, 4) measure outcomes with a goal of improving both the standards and the curriculum.

In an effort to promote technical education and to assist business and industry in becoming more productive and competitive, the American Technical Education Association published a set of national minimum standards for technical associate degree programs in 1991. These standards were designed to prepare technical students to obtain a job, become productive workers with little additional training, and advance with the technical developments in an occupational field. The Association suggests that 49% of the curriculum should be technical core courses, 15% general education communications and social studies courses, 13% math and science support courses, 10% related technical courses, and 13% controlled electives.

Performance standards do not remain static, some occupations will need minor adjustments from year-to-year--others will need major rework if substantial changes occur in the workplace, especially related to technology. If standards are not kept current, they will not be taken seriously and ultimately discontinued or allowed to lapse. Assessment methodologies of standards should also be reviewed on a consistent timeline, as new methods are developed. Performance standards must also be assessed in a way to permit accurate measurement of students' skills and abilities and must account for the different ways students learn and communicate. Thus, assessment of the

standard might require written, oral, or visual measurement techniques. And finally, Elman and Lynton (1986) suggested that

> If performance based assessment is to become an important element in career-oriented education, it is necessary to incorporate real or simulated experiences as earlier and more integral components of the curriculum, and to structure them in such a way as to provide valid opportunities for assessment (p. 68).

Conclusion

Performance standards should be based on identifiable and verified competency. These competencies should be determined in advance and explicitly stated. The competencies should demonstrate accomplishments and then assessment techniques can include actual performance. Students can move through the competencies in a simulated work environment at their own pace, receiving meaningful feedback on their work. The private sector should be intimately involved in the development of the competencies and final performance standards. This involvement will assist the private sector in recruiting and retaining qualified employees. The involvement will also solidify a trusting relationship between business and education.

As indicated, during the last few years, there has been a shift in emphasis by regional accrediting agencies to the use of outcome measures to assess institutional effectiveness. This shift provides community and technical colleges an opportunity to focus on accountability and to demonstrate program effectiveness to college stakeholders--the public, the federal government, state and local funding bodies, and students. The shift also offers occupational and technical education the opportunity to utilize industry validated performance standards to improve teaching and learning and to systematically demonstrate a need for additional resources. The development of performance standards allows colleges the opportunity to accurately measure students' skills and abilities and to focus on what works, not the process to achieve what works. The development of occupational specific performance standards will not be easy. There are enormous costs associated with both the development and implementation of standards and the development and implementation of curricula to address the standards.

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